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MINERALOGICAL NOTES.—A “crystalline bitumen” is found in trap at Port-a-Port bay, Newfoundland. It seems to have resulted from the heating action of the igneous dyke upon bituminous shales and limestones. These latter yield petroleum.—Artificial pseudomorphs of calcite after gypsum have been made by placing a crystal of gypsum in a cold, saturated solution of carbonate of ammonia. The change takes place gradually, and requires several days unless the gypsum is in fine powder, when a few hours suffice.—The beautiful amianthus from Canada is found to be much finer than any asbestos for the manufacture of asbestos fabrics. It is said that the fabrics made from it are light, soft, and white. It is also felted into sheets, which are flexible, and unctuous to the touch. It is known in commerce as “Bostonite” or “Canadian fiber.”—An examination of a white slime which covered the bottom of a mine in Westphalia showed that it was composed of a mixture of Aluminite, Allophane and Hydrargyllite.—A recent analysis of the water of the Dead sea showed it to have a spec. grav. of 1.186, and to contain the following number of grams of solid matter in one litre:

KCl	NaCl	NaBr	MgCl ₂	CaCl ₂	CaSO ₄
16.90	74.05	5.02	128.10	35.36	1.21

—Gold is reported as having been found in a ledge of quartzite near Amity, Orange county, New York. This is a locality already well known to mineralogists as having afforded many rare and beautiful species.—In a specimen of Cerussite from Leadville, Col., analyzed by M. W. Iles, a small percentage of Massicot and a trace of chlorine was detected.

Mineralogists should beware of artificial moss-agates. They are being manufactured of great perfection at Oberstein, Germany. The coloring matter is introduced in chalcedony to form artificial dendrites.

GEOGRAPHY AND TRAVELS.¹

EXPLORATIONS IN EQUATORIAL AFRICA.—*Makua Land and the Interior of Mozambique*.—Makua Land, the unexplored region lying between Masasi and Mozambique and south of the Rovuma river has recently been traversed in different directions by three Englishmen. The Rev. Chauncy Maples, of the Universities Mission, advanced as far as Meto, about S. lat. 13°25' E. long. 37°58'. He was prevented by the cowardice of his native followers from continuing his journey to Mozambique. He heard reports of the existence of a snow-capped mountain called Irati, about 130 miles south-south-east of Meto and visible from that point in very clear weather.

Mr. H. E. O'Neill, British Consul at Mozambique, has recently undertaken the exploration of a route to Lake Nyassa which starts from Kisanga, opposite the island of Ibo. He found the country

¹ Edited by ELLIS H. YARNALL, Philadelphia.

for the first forty miles of his march from the coast at Mokambo Bay thinly timbered with thick undergrowth, including quantities of the India-rubber vine, fairly cultivated and populous. The country then becomes rocky and broken with hills and peaks of bold shapes and precipitous sides from 200 to 1000 feet in height. At the one hundred and forty-second mile of his march he speaks of coming into view of the exceedingly beautiful Shalawe plain, which, dotted with villages, stretches away for many miles to the west and south where the vista terminates in a range of splendid hills 2000 to 4000 feet high. Mr. O'Neill made a successful journey of 600 miles, returning at the end of November last, and we hope shortly to give some details of his explorations.

Mr. Joseph Thomson, who was sent by the Sultan of Zanzibar to examine some so-called coal beds on the Lujende river near its junction with the Rovuma, passed through the northern portion of this region and has sent an interesting account of his journey to the Royal Geographical Society. The "coal" turned out to be some irregular layers of bituminous shale of no practical use. Mr. Thomson's report so much displeased the Sultan that he at once broke the engagement he had made for a period of two years with Mr. Thomson, who has returned to England.

One of the members of the Universities Mission, the Rev. W. P. Johnson has also recently visited a lake; the source of the Lujende branch of the Rovuma. On reaching the banks of the lake he could see it stretching away to the south-east, the lofty hill Mangoche, near Nyassa, east of Mponda, being visible at the same time to the north-west. He supposes the lake to be the Lake Shirwa of Livingstone, the northern part of which has never before been visited.

Mr. Schuver's Expedition to Central Africa.—*Petermann's Mittheilungen* has received an account of the progress of Mr. J. M. Schuver on his journey from the Nile to Central Africa. He reached Fadassi on June 12, 1881. The source of the Termat affluent of the Blue Nile is in the Sori mountains west of Fasuder. Another stream of the same name near Belletafa is an affluent of the Jaboos river. He left Fadassi, on July 30th, on a trip of thirty-eight days to the south, during which he reached the country of the Légha Gallas near the source of the Jaboos. He also explored the Amam country which is watered by two affluents of the Jaboos. The water-shed between the two Niles was defined as far as the eighth parallel. He saw far away to the south-west the great lake and river Baro flowing towards the west and situated a degree further south than as shown on Petermann's map. The Wallel mountain rises to the east to the height of 11,000 feet.

The Légha Gallas are a powerful tribe numbering 20,000 warriors, and inhabit a country far to the westward of the Galla country proper. Mr. Schuver proposed to leave Fadassi on January 1st, to explore the unknown regions down to the equator.

Dr. Stecker in Abyssinia.—Dr. Stecker, the former companion of Dr. G. Rohlfs, has recently visited Lake Tana. He has explored all the lake, visited the mountains on its shores, and prepared a detailed map of this basin. Lake Tana has a superficial area of 1150 square miles, and is at an elevation of 6370 feet above the sea-level. The greatest depth ascertained is 38 fathoms. Dr. Stecker has made interesting collections of plants, insects, fishes and mollusks, and he discovered in the Gorgora mountains, situated north of the lake, unmistakable proofs of volcanic activity; eruptive cones, a crater and a mighty lava stream, all probably recent, as in the volcanic rocks he has found inclosed remains of a mollusk which still inhabits the waters of Lake Tana. Dr. Stecker, since he completed the survey of the lake in July last, visited Zobul, a province only recently conquered by King Johannes, and never before visited by an European explorer. It lies to the east of Lake Ashangi and is inhabited by Azebu Galla. Dr. Stecker's last letter is written from that lake, the environs of which he had surveyed. If all goes well, he proposes to explore the countries to the west of Lake Tana as far as Fazokl, and then to visit Enarea and Kaffa.

De Brazza on the Congo.—M. Savorgnan de Brazza, when last heard from, had arrived on the Alima river and was then preparing to launch his small steamer to begin the exploration of the Congo. M. Mizon, who was sent out to assist him reached Franceville, the station on the Upper Ogowé, on September 22, 1881. In his report to the French Committee of the International African Association he mentions among the products of the Upper Ogowé country caoutchouc and palm oil. There are forests of wild pine, the fiber of which is used by the natives for various purposes, including nets for catching game and fish.

Pöge and Wissmann.—Doctor Pöge and Lieut. Wissmann, owing to the disturbed condition of the country, have decided not to attempt a visit to Mossumba, the residence of the Muata Yanvo, but will endeavor to reach Tushilango-land. To do this they must follow the Kassai river to its junction with the Lulua, near to which they expect to find a great lake. They will thus advance, if successful, into an entirely unexplored portion of the Congo basin near the fifth degree of south latitude and several hundred miles north of Schütts's furthest point.

Doctor Buchner.—The German traveler, Dr. Buchner, in an address made at St. Paulo de Loanda on his return from the interior of Africa, after giving a brief account of his journey to, and residence at Mossumba, the capital of the Muata Yanvo, stated that in his endeavors to push northwards after leaving Mossumba, he had crossed fifteen rivers, thirteen of them in canoes. With the exception of two, all these rivers have parallel and northerly courses. In this respect Dr. Buchner fully agrees with the views of his predecessor, Herr Schütts, as to the Kassai water

system, but he does not think that, even after it has received all its tributaries, the Kassai can be in any way compared with the Lualaba. Where he passed it the last time, in 8° S. lat. in the dry season, the Kassai had only a breadth of 394 feet, and a depth of ten feet, with a current of rather less than two miles.

Notes.—A relief map of the equatorial region of Africa on the horizontal scale of one inch to twenty-five miles, and the vertical scale of one inch to five thousand feet has recently been exhibited in London.—The French Government has undertaken to make a railroad between the Upper Senegal and the Niger rivers. The surveying expeditions reached the starting point of the road on the Senegal at Khay, seven or eight miles below Medina on November 6th last.—Commander V. L. Cameron, sailed from Liverpool on December 31, 1881, for Axim to join Capt. R. F. Burton in his exploration of the country at the back of the western portion of the Gold Coast colony.—A Russian expedition for the exploration of Western Equatorial Africa is to leave Europe in April. The Cameroons mountains are proposed as the base of operations, and the exploration of the reported lake region to the east of them is the chief aim of the expedition.—Dr. Josef Chavanne estimates the mean altitude of the continent of Africa to be 2169.93 feet or double the mean altitude of the continent of Europe, which is estimated at 971.41 feet.—Since the return of the three native envoys from England, King Mtesa has been much better disposed to the English missionaries in Uganda.

MICROSCOPY.¹

AMERICAN SOCIETY OF MICROSCOPISTS.—The Proceedings of the fourth annual meeting of this Society, held at Columbus, Ohio, August 9th to 11th, 1881, have been issued in a pamphlet of 102 pages and seven plates. Perhaps the most generally interesting of the ten papers published, is "A Study of Blood," by Lester Curtis, M.D., of Chicago. This paper describes a very careful study, with one-tenth and one-sixteenth objectives, of fine definition and high resolving power, of pus corpuscles, and of white corpuscles, and bleached red corpuscles of human blood, with a view to determining the reality or otherwise, of the net work of fine fibers described as occurring in such structures, by Dr. Carl Heitzmann, of New York, in 1873, and subsequently by Dr. Louis Elsberg, of the same city, Dr. Klein, of London, in his Atlas of Histology, and other writers. Although Dr. Curtis easily recognized (what, indeed, it is not difficult to see) a more or less distinct appearance resembling a net-work, when the field was somewhat blurred and the outlines of objects indistinct, he uniformly by such change of adjustment as would secure a fine definition and distinct outlines, found the appearance of net-work replaced

¹ This department is edited by Dr. R. H. WARD, Troy, N. Y.